REMARKS

The foregoing amendments and these remarks are responsive to the Office Action of June 7, 2007. Claims 6 and 10 are amended, claims 8 and 9 are cancelled, and claims 11-17 are added herein. Upon entry of this amendment, claims 6, 7, and 10-17 will be pending. Favorable consideration and allowance of the present application is respectfully requested in view of the foregoing amendments and these remarks.

Claims 6-10 have been rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,687,829 ("Churchman"). Applicants respectfully traverse the grounds for the rejections as noted in detail herein.

I. Claim Objections

Claims 6 and 10 have been amended to remove the term "adapted to" at locations specifically objected to in the Office Action. However, applicant generally traverses this objection to the use of functional language, as set forth on page 2 of the Office Action. The M.P.E.P. mandates that "a functional limitation **must** be evaluated and considered . . . for what it fairly conveys to a person of ordinary skill in the art in the context in which it is used". M.P.E.P. §2173.05(g) (emphasis supplied). "There is nothing inherently wrong with defining some part of an invention in functional terms. Functional language does not, in and of itself, render a claim improper." M.P.E.P. §2173.05(g), citing In re Swinehart, 169 U.S.P.Q. 226 (C.C.P.A. 1971).

The amendments to claims 6 and 10 to remove the "adapted to" language are being made to improve the form of the claims and not for reasons related to patentability. Accordingly, applicants request consideration and evaluation of all functional limitations in the present claims.

II. Rejection Based on Churchman

Churchman discloses a detector circuit 11 for validating a coin 1 as it rolls down a guide 3 and passes between two conductive plates 7, 9 of a capacitor. The detection circuit 11 comprises an oscillator circuit 23 to which both of the conductive plates 7, 9 are electrically connected. As shown in Figs. 8 and 9 and described at column 14, lines 4-30, the total capacitance between the conductive plates 7, 9 when a coin is not present comprises the capacitance C1 of the air gap between the side walls 2 of the coin guide 3, the air gap having

a width D1, the capacitance C2 of the sidewall 2 next to the first conductive plate 7, and the capacitance C3 of the side wall 2 next to the second conductive plate 9. When a coin passes along the coin guide 3 between the conductive plates 7, 9, the capacitance between the conductive plates is altered by the presence of the coin. As shown in Fig. 10 and 11 and described at column 14, lines 31 to column 15, line 10, the altered capacitance between the conductive plates 7, 9 includes two capacitances CA, CB in parallel. The capacitance CA includes capacitances C10, C20, and C30 in series where C10, C20, and C30 correspond to C1, C2, and C3 which are the capacitances of the air gap and side walls for the part of the area of the conductive plates 7,9 where the coin is absent. The capacitance CB includes capacitances C11, C12, C21, and C31 in series where C21 and C31 are the capacitances of the parts of the side walls 2 of the coin guide opposite the coin 1, C12 is the capacitance of the coin 1, and C11 is the capacitance of the reduced-width portion of the air gap next to the coin 1. Figs. 8-11 of Churchman are reproduced below.
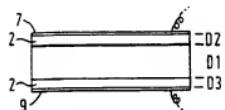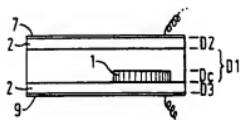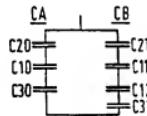

FIG. 8   FIG. 9   FIG. 10   FIG. 11

Figs. 8-10 of U.S. Patent No. 5,687,829

In contrast, claim 6, as amended herein, recites a coin discriminating device comprising, among other things, a sensor electrode, an oscillator coupled to the sensor electrode, and a capacitor for controlling the output signal of the oscillator. The capacitor comprises a first capacitor plate and a second capacitor plate for generating a capacitance therebetween. The first capacitor plate comprises the sensor electrode and the second

capacitor plate comprises a coin positioned in a vicinity of the sensor electrode, the capacitor being free of a third capacitor plate coupled to the oscillator.

Churchman does not teach at least all of the elements of amended claim 6 including a capacitor having a first and second capacitor plate wherein one of the capacitor plates is a coin positioned in the vicinity of the first capacitor plate. Rather, Churchman discloses a capacitor having two plates 7, 9 electrically connected to the oscillator with the side walls 2 of the coin guide 3 and the coin 1 being positioned between the plates.

Furthermore, Churchman does not show or suggest the capacitor is free of a third capacitor plate coupled to the oscillator. Rather, if the coin 1 of the disclosure of Churchman is construed to be a second capacitor plate, the plates 7, 9 would comprise a first and a third capacitor plate coupled to the oscillator.

Accordingly, Churchman does not show or suggest at least the above-noted recitations of claim 6. Similarly, independent claim 10 recites a coin handling machine comprising a coin discriminator having similar features as claim 6 and is submitted as patentable over the art of record for at least the same reasons. Furthermore, dependent claims 7, 11, and 13, depending directly or indirectly from claim 6, and dependent claims 12 and 14, depending directly or indirectly from claim 10, further patentably distinguish over the prior art of record.

For example, new claims 11 and 12 recite that the second capacitor plate is connected to ground. Churchman fails to show or suggest this feature because plates 7, 9 are shown as being electrically connected to the oscillator 23.

New claims 13 and 14 recite that the capacitance is based solely on the air gap between the first and second capacitor plate and is not based on any intervening structure between the first and second capacitor plate. As shown in Figs. 8-11 noted above, Churchman discloses that the capacitance of the first and second capacitor plates is based on the capacitances attributable to the air gap between the plates 7, 9, the side walls 2 located between the plates, and the coin 1 located between the plates when a coin is present.

Furthermore, new claim 15 is not shown or suggested by Churchman in that claim 15 recites, among other things, a frequency detector to provide an output which is for detecting a frequency deviation in the oscillator output signal caused by a variation in capacitance at the sensor electrode when the coin is positioned in a vicinity of the sensor electrode and electrically connected to ground. In the detector circuit 11 of Churchman, the coin 1 is in electrical contact with the oscillator circuit via the conductive plate 9 and the wall 2 and is

not electrically connected to ground. Accordingly, Churchman does not show or suggest all the elements of claim 15.

Dependent claims 16 and 17 depend directly or indirectly from claim 15 and are submitted as patentable for at least the same reasons as claim 15 and because the claims further patentably distinguish.

Accordingly, new claims 11-17 are believed to be allowable over the prior art for at least the aforementioned additional reasons.

III. Conclusion

In view of the foregoing, it is respectfully submitted that the present application is in condition for immediate allowance, and such action is solicited. If for some reason the Examiner deems that the present application is not in condition for immediate allowance, it is respectfully requested that the Examiner telephone the undersigned at 704-849-2453, in an effort to expedite prosecution.

The Commissioner is hereby authorized to charge any additional fees that may be required for the timely consideration of this Amendment under 37 C.F.R. §§ 1.16 and 1.17, or credit any overpayment, to Deposit Account No. 09-0528.

Respectfully submitted,

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